AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): A routing component comprising:

a first interface to communicate data with a first network interface;

a second interface to communicate data with a second network interface having a bandwidth higher than a bandwidth of the first network interface, wherein the first interface and the second interface are integrated within a single integrated circuit;

an embedded memory within the integrated circuit ~~to buffer data communicated in a first direction from the first interface to the second interface; and~~

a memory interface to couple the integrated circuit to an external memory ~~for buffering data communicated in a second direction from the second interface to the first interface;~~ and

at least one control unit that determines a direction of communication for the data between the first network interface and the second network interface,

wherein the control unit buffers the data using the embedded memory internal to the integrated circuit when the data is communicated in a first direction from the first interface having the lower bandwidth to the second interface having the higher bandwidth, and

wherein the control unit buffers the data in the external memory when the data is communicated in a second direction from the second interface having the higher bandwidth to the first interface having the lower bandwidth.

Claim 2 (Currently Amended): The routing component of claim 1, wherein the at least one control unit comprises ~~further comprising~~:

a first control unit to buffer in the embedded memory data that is received from the first interface and forwarded to the second interface; and

a second control unit to buffer in the external memory data that is received from the second interface and forwarded to the first interface.

Claim 3 (Original): The routing component of claim 2, wherein the external memory has a greater storage capacity than the embedded memory.

Claim 4 (Original): The routing component of claim 1, wherein the first interface comprises a wide area network (WAN) interface.

Claim 5 (Original): The routing component of claim 1, wherein the second interface comprises a switch fabric interface.

Claim 6 (Original): The routing component of claim 5, wherein the switch fabric interface communicates crossbar data.

Claim 7 (Previously Presented): The routing component of claim 1, wherein the routing component is implemented using a single application specific integrated circuit (ASIC).

Claim 8 (Original): The routing component of claim 1, wherein the embedded memory comprises a random access memory (RAM).

Claim 9 (Currently Amended): A network element comprising:

a first network interface to communicate data with a network at a first bandwidth;

a second network interface to communicate data with the network at a second bandwidth higher than the first bandwidth;

a routing component formed in an integrated circuit, wherein the routing component has an embedded memory within the integrated circuit; and

a second memory external to the routing component,

wherein the routing component determines a direction of communication for the data between the first network interface and the second network interface,

wherein the routing component buffers data communicated in a first direction from the first network interface having the lower bandwidth to the second interface having the higher bandwidth in the embedded memory internal to the routing component ~~that is communicated in a first direction from the first network interface to the second network interface~~, and

wherein the routing component buffers data communicated in a second direction from the second interface having the higher bandwidth to the first interface having the lower bandwidth in the second memory external to the routing component ~~that is communicated in a second direction from the second network interface to the first network interface~~.

Claim 10 (Cancelled).

Claim 11 (Previously Presented): The network element of claim 9, wherein the second memory has a greater storage capacity than the embedded memory.

Claim 12 (Previously Presented): The network element of claim 9, wherein the first network interface and the second network interface comprise wide area network (WAN) interfaces.

Claim 13 (Previously Presented): The network element of claim 9, further comprising a switch fabric coupling the routing component to a second routing component.

Claim 14 (Previously Presented): The network element of claim 13, wherein the switch fabric communicates crossbar data.

Claim 15 (Previously Presented): The network element of claim 9, wherein the routing component is implemented using an application specific integrated circuit (ASIC).

Claim 16 (Original): The network element of claim 9, wherein the embedded memory comprises a random access memory (RAM).

Claim 17 (Original): The network element of claim 9, further comprising a second router having an embedded memory to store data communicated using the second network interface.

Claim 18 (Currently Amended): An integrated circuit (IC) comprising:

a first interface to communicate data with a network at a first data rate;

a second interface to communicate data with the network at a second data rate higher than the first data rate;

an embedded memory internal to the IC ~~to buffer data communicated in a first direction from the first interface to the second interface~~; ~~and~~

an interface to a memory external to the IC ~~for buffering data communicated in a second direction from the second interface to the first interface~~; and

at least one control unit that determines a direction of communication for the data between the first network interface and the second network interface,

wherein the control unit buffers data in the embedded memory internal to the integrated circuit when the data is communicated in a first direction from the first interface having the lower data rate to the second interface having the higher data rate, and

wherein the control unit buffers the data using the external memory when the data is communicated in a second direction from the second interface having the higher data rate to the first interface having the lower data rate.

Claim 19 (Original): The IC of claim 18, wherein the memory external to the IC has a greater storage capacity than the embedded memory.

Claim 20 (Original): The IC of claim 18, wherein the first interface is coupled to a wide area network (WAN) interface.

Claim 21 (Original): The IC of claim 18, wherein the second interface is coupled to a switch fabric.

Claim 22 (Original): The IC of claim 21, wherein the switch fabric comprises a crossbar.

Claim 23 (Original): The IC of claim 18, wherein the embedded memory comprises a random access memory (RAM).

Claim 24 (Currently Amended): A router comprising:

an integrated circuit (IC) comprising:

a first interface to communicate data with a network having a first bandwidth;

a second interface to communicate data with the network having a second bandwidth higher than the first bandwidth;

an embedded memory ~~to buffer data communicated in a first direction from the first interface to the second interface~~; and

an interface to a memory external to the IC ~~for buffering data communicated in a second direction from the second interface to the first interface~~; and

at least one control unit that determines a direction of communication for the data between the first network interface and the second network interface,

wherein the control unit buffers the data using the embedded memory internal to the integrated circuit when the data is communicated in a first direction from the first interface having the lower bandwidth to the second interface having the higher bandwidth, and

wherein the control unit buffers the data in the external memory when the data is communicated in a second direction from the second interface having the higher bandwidth to the first interface having the lower bandwidth.

Claim 25 (Original): The router of claim 24, wherein the memory external to the IC has a greater storage capacity than the embedded memory.

Claim 26 (Original): The router of claim 24, wherein the first interface is coupled to a wide area network (WAN) interface.

Claim 27 (Original): The router of claim 24, wherein the second interface is coupled to a switch fabric.

Claim 28 (Original): The router of claim 26, wherein the switch fabric comprises a crossbar.

Claim 29 (Original): The router of claim 24, wherein the embedded memory comprises a random access memory (RAM).

Claim 30 (Currently Amended): A method for communicating data using a network router, the method comprising:

receiving inbound data from a network interface via a first routing component;

accessing a forwarding table with a control unit of the network router to determine a network destination for the data;

when the destination requires forwarding the data to a second routing component internal to the router using a switch having a higher bandwidth than the network interface, buffering the inbound data within an embedded memory internal to the first routing component;

forwarding the inbound data from the first routing component to a second routing component via the ~~a~~ switch;

receiving outbound data with the first routing component from the switch;

when the destination requires forwarding the outbound data to the network interface having a lower bandwidth than the switch, buffering the outbound data within a memory external to the first routing component; and

forwarding the outbound data to the network interface.

Claim 31 (Previously Presented): The method of claim 30, wherein the external memory has a greater storage capacity than the embedded memory.

Claim 32 (Previously Presented): The method of claim 30, wherein the first network interface comprises a wide area network (WAN) interface.

Claim 33 (Canceled).

Claim 34 (Currently Amended): The method of claim ~~33~~30, wherein the switch communicates crossbar data.

Claim 29 (Original): The router of claim 24, wherein the embedded memory comprises a random access memory (RAM).

Claim 30 (Currently Amended): A method for communicating data using a network router, the method comprising:

receiving inbound data from a network interface via a first routing component;

accessing a forwarding table with a control unit of the network router to determine a network destination for the data;

when the destination requires forwarding the data to a second routing component internal to the router using a switch having a higher bandwidth than the network interface, buffering the inbound data within an embedded memory internal to the first routing component;

forwarding the inbound data from the first routing component to a second routing component via the ~~a~~ switch;

receiving outbound data with the first routing component from the switch;

when the destination requires forwarding the outbound data to the network interface having a lower bandwidth than the switch, buffering the outbound data within a memory external to the first routing component; and

forwarding the outbound data to the network interface.

Claim 31 (Previously Presented): The method of claim 30, wherein the external memory has a greater storage capacity than the embedded memory.

Claim 32 (Previously Presented): The method of claim 30, wherein the first network interface comprises a wide area network (WAN) interface.

Claim 33 (Canceled).

Claim 34 (Previously Presented): The method of claim 33, wherein the switch communicates crossbar data.

Claim 35 (Currently Amended): A routing arrangement comprising:

a crossbar arrangement;

a plurality of routing components coupled to the crossbar arrangement, at least one of the routing components comprising:

a first interface to communicate data with a network;

a second interface to communicate data with the crossbar arrangement, wherein the second interface has a bandwidth higher than a bandwidth of the first interface;

an embedded memory ~~to buffer data communicated in a first direction from the first interface to the crossbar arrangement~~; ~~and~~

an external memory interface to a memory external to the routing component ~~device for buffering data communicated in a second direction from the crossbar arrangement to the network~~; and

at least one control unit that determines a direction of communication for the data between the first interface and the second interface,

wherein the control unit buffers the data using the embedded memory internal to the routing component when the data is communicated in a first direction from the first interface having the lower bandwidth to the second interface having the higher bandwidth, and

wherein the control unit buffers the data in the external memory when the data is communicated in a second direction from the second interface having the higher bandwidth to the first interface having the lower bandwidth.